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ABSTRACT

The general intent of this paper is to make a case for educational intervention programs for children age 3 or younger. Section I reviews the developmental psychological literature on the intellectual development of children age 3 and younger. Particular attention is given to the environmental situations which facilitate or retard cognitive development. Section II examines specific early intervention programs (programs in child care centers and also home-based programs) whose common aim is the facilitating of cognitive growth in very young children. The last section reviews a number of frequently used assessment and screening instruments for children from birth to 3 years of age, and examines the validity and reliability of instruments which could be used to measure the impact of educational intervention systems. Also discussed in this section are diagnostic instruments which identify children's weaknesses. (Author/MP)

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AMERICA'S DAYCARE DILEMMA

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Introduction

The general intent of this paper is to make a case for educational intervention programs for children three years or younger. Educational intervention will be defined as any systematic program within the child's home or in a child care center, that has as its goal the improvement of the child's cognitive status. More specifically, the aim of an intervention program is to prevent or remediate those situations which could have a detrimental impact on a young child's cognitive development. As part of the rationale for advocating intervention programs for young children, the Developmental Psychological literature on the intellectual development of children three years of age and younger will be examined. Particular attention will be paid to those environmental situations which facilitate or retard cognitive development. Those conditions which facilitate intellectual growth in young children should be the foundation on which an educational intervention program is built. In the second section of this paper, Intervention Programs for Young Children, specific educational intervention programs will be examined. In the third section of the paper, Instruments for Assessing Young Children, a number of assessment instruments (diagnostic, normative, and ordinal) will be discussed. The intent of this last section is to examine the validity and reliability of instruments which could be used to measure the impact of educational intervention systems. Also, diagnostic instruments which identify children's weaknesses will be examined.

Developmental Psychology Literature on Early Intervention

The examination of early intervention systems with young children has been a recurrent theme in the history of Developmental Psychology. The initial, and most persistent, motivating force behind these studies was the nature-nurture controversy. Succinctly stated, the nature argument states that one's capacity to learn is innate, environmental input has little effect on one's cognitive makeup. The nurture position has most of the child's cognitive abilities resulting from environmental conditions. Like most controversies which involve only dichotomous choices, the sensible alternative seems to be somewhere between the extremes. The position taken in this paper is that nature and nurture interact, i.e., they influence each other. One's genetic endowment affects one's cognitive possibilities, but the realization of this endowment is clearly affected by the environment. This position states that "an adverse or enriched experience will be retained provided only that it is reinstated in a minimal way at intervals" (Thompson and Grusec, 1970, p. 631). That is, initial conditions of deprivation will have longlasting results as long as the deprived conditions persist. Similarly, a history of early deprivation could be reversed if the deprived conditions are replaced with enriched conditions, i.e., intervention. If the intervention process is to be successful in reversing the adversely affected cognitive processes, then intervention should start as early as possible and it should be sustained. The length of time that intervention should be sustained is certainly related to the

amount of deprivation previously experienced by the child. Thus, cognitive processes adversely affected by deprivation can be remedied with early and prolonged intervention. Implicit in this position is the early diagnosis and attempted remediation of the adverse conditions.

The notion of reversibility, or the extent to which early deficits can be reversed, is crucial in an examination of early intervention programs. Early researchers in Child Psychology were heavily influenced by Freud (Bowlby, 1969), who believed that the first three years of the child's life determined future development. Freudians stressed the importance of the child's early experience with mother as a predictor of future development. Studies by Spitz (1945) and Goldfarb (1943) found that children who were institutionalized the first two years of their lives often were deficient in cognition. It was also hypothesized that the problems resulting from prolonged exposure to institutional conditions were irreversible. Bowlby (1969), although not a Freudian, also argues that the relationship established between the infant and the mother for the first three years of the infant's life are crucial to the child's later development. Relations between mother and child, it is argued, is the basis for future social and cognitive development. A study by Westman (cited in Butler, 1970) corroborates this point. Children who had social adjustment problems in nursery school, tended to have similar problems in later school life.

Further, and more recent, empirical research has continued to suggest the importance of the infant's meaningful interaction with their mothers. Attachment is the term used to label the relationship between infant and mother when the infant trusts the mother to the extent that the former feels secure when left with another caretaker. Sroufe's (1978)

research suggests that infants who are securely attached at a young age are more effective problem solvers at two years of age. Effective problem solving is defined as task involvement, persistance when difficulty is encountered, and ability to ask adults for help without being overtly dependent on the adults.

The work of Kennell and Klaus (1978) also stresses the importance of the child actively interacting with their mother at a very young age. Drawing from Bruner's (1976) research on language acquisition, Kennell and Klaus hypothesize that a caretaker who actively interacts with the infant, i.e., face-to-face contact in oral and manual communication, facilitates the young child's later language development. They found that mothers who engaged in face-to-face communication with their infants tended to use more complex language, i.e., more words and adjectives per proposition; they are also less directive of the infants, i.e., allowing infants to explore the environment. These same children were retested when they were five years old. When compared to a similar control group, they were found to have significantly higher I.Q. scores.

The research thus far cited on the period of birth to three years of life has often been labelled supportive of a "critical period" of development. That is, if a child is not exposed to certain stimuli and does not develop certain cognitive processes during a "critical" period, the likelihood of developing those processes at a later time is not good. The evidence cited heretofore seems to support the "critical period" hypothesis. It is my opinion, however, that the period from birth to three years is a "sensitive period", not a "critical period." As was stated at the beginning of this section, the stochastic nature

of development is supported in this paper. That is, early deprivations are critical to the future cognitive development of the child to the extent that they are not remedied. "The more severe the deprivation in terms of intensity and length, the more domains seem to be affected" (McMahon, 1976). This position has Piaget's (1936) developmental theory as its basis. Piaget believes that the sensori-motor period, or that time approximately between birth and two years, is important in the future cognitive development of the child. During this time the child's cognitive processes are developed when the child actively interacts with materials and people in the environment. These experiences are organized into cognitive structures which are in turn the bases for higher cognitive processes. A child's organized early experiences provide an opportunity to interact with materials on a higher, more abstract level. By interacting with materials and people, the child learns that one can have an effect on the environment. This should motivate the child to seek new and different experiences. Hunt has succinctly described the process: "the more an infant has seen and heard, the more he wants to see and hear" (Hunt cited in Butler, 1970, p. 100). Thus, development can be facilitated by affording the young child opportunities to actively interact with a variety of materials and people. The lack of such interactive experiences may be remedied by providing the sensori-motor child with an enriched environment in which to interact. Again, the longer the child is exposed to deprived conditions, the longer and more intense the intervention process must be. If intervention is postponed and conditions of deprivation are acute, the negative effects indeed may be irreversible. The review of developmental psychology research cited

in this section has clear implications for early intervention. The research stated that the period in the young child's life from birth to three years of age is a sensitive period for cognitive development. Thus the need for the early identification of those children most in need. Optimal conditions would have the infant investing trust in a stable caretaker who encourages the infant to communicate and explore the environment.

Communication is important in the young child's development. This is relevant in light of Bayley's (1969) findings that the verbal ability in the young child is the best predictor of later intelligence. These optimal conditions should be extended at least until the child is out of the sensori-motor stage of development. At this time, it is hypothesized, the child is more capable of independent learning. In cases where optimal conditions do not exist, those children and their parents should be identified as early as possible and exposed to an enriched intervention program. Indeed, one of the recommendations growing out of the Westinghouse Assessment of Head Start, was that if intervention was effective, it should begin before the preschool period. The next section will examine more specifically those intervention programs whose aim it is to remediate cognitive processes.

Intervention Programs for Young Children

The previous section of this paper outlined those conditions which were responsible for facilitating cognitive growth in very young children. Specific early intervention programs whose common aim is the facilitating of cognitive growth in very young children will now be examined.

The general basis of the intervention programs examined in this section is that very young children must be exposed to environments where they can interact with people and materials in a manner that is appropriate to the developmental level of that child. Hunt (1961) has referred to "the problem of the match" between the child's cognitive developmental level and the educational programs which are intended to enhance that development. The evidence provided by developmental literature thus far reviewed, suggest that the period between birth and three years of age is a sensitive period in the child's cognitive development. Thus all programs examined here will stress the importance of providing environmental stimuli which are appropriate for that specific age group. First, this section will review those intervention programs that are based in a child care center. Secondly, those early intervention programs that are home-based will be examined. Home-based programs are those programs where both mother and child are targeted for intervention; these usually occur in their home.

A recent Masssachusetts Early Education Project Survey (Rowe, 1972, cited in McMahon, 1976) found that most parents preferred to have children from birth to three years of age cared for in their homes by their own mothers. Not all mothers, however, have the luxury of staying home with their infants, given the large number of single parent families. It is usually necessary for the single parent to hold a job outside of the home to provide sustenance for the family. As was previously cited, infants attached to stable caretakers outside of the home as well as to their own mothers. Child care centers outside of the home are most effective in facilitating cognitive growth when there is a stable core of caretakers with whom the child can interact (Butler, 1970). A program for infants between six and eighteen months piloted by Caldwell and Richmond (1968) found that infants in center-based programs attached to mothers in a manner similar to a control group that stayed home with their mothers. In addition, the center group made statistically significant gains on the Bayley Mental Motor Development Scales. Similar results were attained by Heber and Garber at the University of Wisconsin (cited in McMahon, 1976). Infants in the Heber-Garber program were enrolled in the program shortly after birth and continued in the program for four years. By the time the children were three years of age, they scored on an average of 33 I.Q. points higher than the control group. The results of the programs cited are representative of intensive intervention programs. The gains noted in such programs, however, are usually not sustained very long after the children leave the program (Bronfrenbrenner, 1974). The center-based programs that tend to have sustained effects are those programs which

start the intervention process at a very young age, stress cognitive skills in the curriculum, and are long-lasting, i.e., after kindergarten. This is particularly true if the children's home environments are very different from the middle class home. In reviewing the early intervention literature, Bronfenbrenner (1974) found that those intervention programs which have sustained positive effects are the programs which view the mother as the prime educator of the child. These programs, in other words, help the mother interact with her child in such as way that will facilitate the child's cognitive growth. The remainder of this section will examine some early intervention programs which involve both mother and child in the intervention process. Most of the programs involving both mother and young child in the intervention process are home-based. That is, a trainer goes into the home and demonstrates ways of interacting with the young child which facilitate cognitive growth.

A comprehensive program for infants is the Brookline Early Education Project (BEEP) under the direction of Burton White. In 1973 the project had as its overall objective, learning how to structure the experiences of the first six years of life so that a child might be optimally prepared for formal education (McMahon, 1976). Mothers of competent infants in the program were found to talk with their infants and interact with them with objects. They also encouraged the child when the child was engaged in a cognitive task. White concluded from BEEP results that the period beginning at eighteen months is of special importance for the development of cognitive skills in general, and for language development in particular; the mother's actions with the young child are particularly important during the second year of the child's life.

Ira Gordon's (1975) Florida Parent Education Program gave home visits to lower socioeconomic status mothers and their three month old infants until the infant's third birthday. The trainers in this program were paraprofessionals who received a five week intensive training course. They visited homes one time per week to demonstrate effective mothering practices. Results of an experiment showed that largest cognitive gains were realized on the Peabody Picture Vocabulary Test and the Stanford Binet Test by those children enrolled in the program for three years. In other words, a longer intervention period, i.e., three years as opposed to two years or one year, produced largest cognitive gains.

Levenstein's (1968) Verbal Interaction Mother-Child Home Program, involved eighteen month old children and their mothers with paraprofessional home visitors. Home visitors helped mothers interact with children in such a way that cognitive growth was facilitated. More specifically, mothers were taught how to help children label, categorize, and describe the toys which were provided by the home visitor. At the end of the first year of the program, children scored 17 points higher, ($p < .001$), on Cattell and Stanford Binet I.Q. Tests and 12 points higher, ($p < .01$), on the Peabody Picture Vocabulary Test. A more recently reported longitudinal study on the project (Levenstein, 1976), showed that program effects were maintained two years after children were out of the program.

Results from early intervention programs discussed in this section suggest that the period between birth and three years of age is a sensitive period in the cognitive development of the child. Children

from deprived environments exposed to intervention programs during this sensitive period usually realize significant cognitive gains. Optimal gains, however, are sustained only when the intervention process takes place in infancy, involves a parent, and is longlasting. Thus one year intervention program for two year olds will only have minimal longitudinal benefits.

Assessment Instruments for Use with Young Children

The intent of this section is to review a number of frequently used assessment and screening instruments for children from birth to three years of age. A discussion of available assessment and screening instruments that purport to measure the cognitive status of young children in educational intervention programs is necessary in a paper of this type. The position of the writer is that significant cognitive growth occurs when young children from deprived environments are exposed to a sustained intervention program at an early age: cognitive status is the variable being measured. Thus the need to have valid and reliable instruments to measure cognitive status. Secondly, instruments which purport to be screening instruments should be able to identify those children who would benefit most from an intervention program.

In this section, assessment and screening instruments for use with children ranging in age from birth to three years will be reviewed. A more extensive review of some of these tests will be listed in Appendix A.

The cognitive status of a young child is assessed by measurement instruments in a number of ways, i.e., expressed through different types of test scores. The Intelligence Quotient (I.Q.) is a ratio score based on a child's ability to respond to certain test items and the child's chronological age. This ratio yields a mental age score. Developmental Age (DA) and Developmental Quotient (DQ) are two less familiar measures of the cognitive status of very young children. Both the DA and DQ are

the result of the child's total number of correct answers on a test; no differentiation between test items is made. The DQ differs from the DA in that it is based on the notion that individual children progress through a set sequence of skills at different rates.

In the remainder of this section reviews of screening tests and assessment instruments will be examined. Screening tests will be discussed first.

The New Haven Preschool Program has developed the Clifford W. Beers Developmental Screening Test* (1971) which claims to be a wide ranging screening instrument. The instrument screens on the following areas: language-cognition; visual-motor conceptualization; motor coordination; numbers; digit span. The test takes only 30 minutes to be administered and yields a Readiness Level Score.

The Boehm Test of Basic Concepts* (1971) is a widely used standardized screening test which identifies those cognitive skills which are most deficient. The test is used primarily to identify those skills which may need remediation if the child is to succeed in kindergarten.

The Cooperative Preschool Inventory* (1970), like the Boehm, is a screening test used to identify those areas in which the child needs remediation if she/he is to succeed in school. The instrument was standardized on 1,531 children from different ethnic and racial groups. Scores on the test indicate which areas need remediation and the child's percentile rank.

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*A more extensive review of this test can be found in Appendix A.

The Denver Developmental Screening Test* (ND) identifies children from two weeks to six years of age who have a high probability of being developmentally impaired. The instrument was normed on a sample of 1,036 Denver children. Scores of normal, questionable, or abnormal status is based on the number of test items passed.

The above reviewed instruments are screening instruments. The intent of a screening instrument is to identify those areas of the cognitive process which may need remediation. Performance norms for screening tests, not unlike instruments that assess cognitive growth, are based on the performance of children from a certain age group and/or developmental level on tasks that tap critical cognitive processes. The remainder of this section will examine assessment instruments which attempt to measure the cognitive status of the young child.

One of the first assessment instruments to be used with very young children was the Stanford-Binet Intelligence Scale (Terman, 1960). It is composed of tasks which require a variety of responses from children, including the identification of common objects, hand-eye hand coordination, work definition, practical judgements, arithmetic computations, sentence completion and problem interpretations. "It has led a distinguished life as a pioneer in the ... assessment enterprise" (Buros, 1972).

The Cattell Infant Intelligence Scale (1947) is a downward extension of the Stanford-Binet. It has been modified by observations of the Merrill-Palmer, Minnesota Preschool and Gesell scales. Like the Binet, it yields Mental Age (MA) and IQ score. It was first published in 1940. The scale has five items and one or two alternate items for each age level. The score obtained is the child's mental age. A number of props are needed. The test is untimed and individually administered by a trained test administrator. Item response rates for various ages of infants are reported. Spearman-Brown reliabilities and predictive validities with Stanford-Binet scores (36 mos.) are available.

The next instrument under consideration is the Bayley Scales of Infant Development (1969). Like the Cattell and the Stanford-Binet, it is widely used in the assessment of infants. There is a broad coverage of behavioral repertiores. The scales are recommended for clinical and research methods. It has been found to correlate highly with the Brazelton Neonatal Behavioral Assessment Scale (Sostek and Anders, 1977). It is used in recognition and diagnosis of sensory and neurological defects. "There is high reliability, excellent standardization--representative of the U.S. population, controlled for sex, race and education of the head of household" (Buros, 1972).

The McCarthy Scales of Children's Abilities assesses the intellectual and motor development of children two and a half to eight and a half years of age. It yields scores for verbal ability, short term memory, numerical ability, perceptual performance, motor coordination, lateral dominance, and overall intellectual competence. Tasks are suitable for

both sexes, as well as for children from various ethnic, regional, and socioeconomic groups. It was standardized on a stratified sample controlled for age, sex, color, region of the country, and father's occupation.

The Peabody Picture Vocabulary Test* (1965) is a test of verbal intelligence for children two to six years of age. It predicts the young child's future school success; it also correlates highly with the Binet Mental Age Score.

Uzgiris and Hunt* (1975) have developed an ordinal scale to measure the cognitive development of children in Piaget's sensori-motor stage of development; approximately birth to two years of age. The ordinal scales are based on Piaget's (1936) theory of development. Piaget hypothesized that the sensori-motor period is characterized by six substages that occur in an invariant hierarchic order. The hierarchic order of the substages has been verified empirically in Western cultures (Piaget, 1936) and by cross cultural research (Nyiti, 1976; Ashton, 1975). Thus the scales seem to demonstrate construct validity.

The six major substages for the sensori-motor period that are assessed with the ordinal scales are:

1. general representation
2. development of recognition
3. development of prehension
4. development of object permanence
5. development of imitation
6. understanding causality

Test-retest reliability for the whole instrument is 79.9 and the interrater reliability on the final version of the scales was 96.1. Thus the validity has been established by a large body of empirical research and the reliability is high.

The tests reviewed in this section are but a few of the tests available to assess the cognitive status of children from birth to two years of age. Most of the studies which were cited in other sections of this paper used the tests reviewed in this section to measure cognitive status. These tests have been shown to be both valid and reliable in assessing cognitive status. Thus we should be able to conclude that the results which suggested that early intervention programs do improve a young child's cognitive status is based on valid and reliable empirical evidence.

Appendix A

Name of Instrument:	CLIFFORD W. BEERS DEVELOPMENTAL SCREEN PRESCHOOL LEVEL (1974 Revision)
Publisher:*	New Haven Preschool Program for Handicapped Children The Celetano School 400 Canner Street New Haven, CT 06511
Description:	A wide-ranging screening instrument which yields a quick, individual assessment of the developmental levels of children, in six areas: 1. Language-Cognition 2. Visual-Motor Conceptualization 3. Motor Coordination 4. Numbers 5. Digit Span
Appropriate Age Level:	3.6 to 6.6 years
Administration:	The instrument can be administered by teachers or other school personnel after one training session. A pre-arranged sequence of items has been outlined. Children are assessed individually by an administrator asking specified questions verbatum. "The importance of observing standard procedures should not be construed as requiring a rigid mechanistic administration."
Administration Time:	Approximately 30 minutes.
Group:	Individually administered.
Subcategories:	1. Language-Cognition 2. Visual-Motor Concept 3. Visual Discrimination 4. Motor 5. Number 6. Digit Span
Norming Population:	Based on data gathered in two contexts: pre-kindergarten registration programs in several Connecticut communities; preliminary clinical evaluation of preschool handicapped children at New Haven Model Preschool Program for Handicapped Children.
Scoring:	Raw scores, Readiness level.

*Instrument developed and distributed by the New Haven Preschool Program.

Name of Instrument:	BOEHM TEST OF BASIC CONCEPTS (BTBC), 1971
Publisher:	The Psychological Corporation 757 Third Avenue New York, NY 10017
Description:	The BTBC measures children's mastery of concepts considered necessary for achievement in the first two years of school (K-2) in order to identify chidlren whose overall level of concept mastery is low and to identify concepts with which large numbers of children in a class may be unfamiliar. Forms A and B.
Appropriate Age Level:	Grades K-2.
Administration Time:	15-20 minutes for each of two booklets.
Group:	Small group administration.
Subcategories:	The BTBC is not divided into subtests: the 50 items assess understanding of space, (location, direction, orientation, dimensions), time, and quality.
Norming Population:	Standardized on children in five cities, distributed by high, middle, and low socioeconomic groups.
Scoring:	Raw scores, percentiles. Hand scoring only.

Name of Instrument: COOPERATIVE PRESCHOOL INVENTORY, 1970

Copyright: Educational Testing Service

Publisher: Addison-Wesley Publishing Co.
Reading, Massachusetts 01867

Description: Designed to be a brief assessment and screening procedure to measure achievement in areas regarded as necessary for success in school. Originally developed to provide an indication of how much a disadvantaged child, prior to his introduction to Head Start, had achieved in areas regarded as necessary foundations for subsequent success in school.

Appropriate Age Level: Ages 3-6

Administration Time: Approximately 15 minutes

Group: Individually administered

Subcategories:

	# of Items
Personal-Social Responsiveness	18
Associative Vocabulary	12
Concept Activation-Numerical	15
Concept Activation-Sensory	19

Extra Materials Needed: A few single items including toy cars, checkers, crayons, and paper boxes

Norming Population: Standardized on 1.531 children in Head Start classes reported by ethnic mix, sex, and age. The Preschool Inventory has been used in additional studies from which fall norm data has been collected and reported.

Scoring: Raw score, percentiles, hand scored

Subjective/ Objective Assessment: Items include a mixture of those than can be objectively assessed, as well as those requiring tester judgment. Directions provided for crediting responses.

Name of Instrument:	DENVER DEVELOPMENTAL SCREENING TEST (DDST)
Publisher:	Ladoca Project and Publishing Foundations, Inc. East 51st Street and Lincoln Street Denver, Colorado 80216
Description:	The DDST is a screening device for identifying children with a high probability of being developmentally impaired. It requires little training and experience to administer. The instrument consists of a kit of inexpensive materials, a score sheet and a reference manual.
Appropriate Age Level:	2 weeks to 6 years
Administration Time:	15-20 minutes
Group:	Individual
Subcategories:	Four: gross motor, fine motor-adaptive, language, personal-social.
Norming Population:	Standardized on 1.036 (543 male, 493 female) normal Denver children aged 2 weeks to 6.4 years. Despite unknown selection factors, children were fairly evenly distributed throughout the city, and reflected racio-ethnic and occupational group characteristics of Denver according to 1960 census data.
Subcategories and Composite Scores:	Items not passed which are normed below child's chronological age are designated "delays". These delays are interpreted per below.
Publisher's Interpretation of Scores:	Based on items passed/failed below and above chronological age, child is classified as (a) normal, (b) questionable, or (c) abnormal.
Subjective/ Objective Assessment:	Structured administration for most items with passing criterion described. The administration and scoring done by examiner. Some items require parent to answer questions about child's behavior.

Name of Instrument:	ORDINAL SCALES OF PSYCHOLOGICAL DEVELOPMENT (1975)
Publisher:	University of Illinois Press Champaign-Urbana, Illinois
Description:	A test of cognitive abilities based on the development of J. Piaget, applicable for 0-2 years of age. The ordinal scales imply a hierarchical relationship between achievement at different levels, i.e., higher stages are derived from those lower stages. For example, a child must be able to hold the image of an object before he will search for it when it is removed. This spiral-like path of development is unlike the linear development posited by traditional tests.
Appropriate Age Level:	0-2 years
Administration:	The instrument is given by a trained administrator to one child at a time. Explicit directions are given for each situation.
Administration Time:	No time limit is given, however, administration of the whole battery could take two days.
Group:	Individually administered
Subcategories:	The test is based on six major categories: 1. general representation 2. development of recognition 3. development of prehension 4. development of object permanence 5. development of imitation 6. understanding causality
Norming Population:	Three samples of 42, 23, and 84 infants from university-related families in Urbana, Illinois.
Scoring:	Ordinal scales determine a child's developmental level
Reliability:	Inter-rater for total test, 96.1
Validity:	Test-retest for total test, 79.9 Construct validity based on Piaget's theory of cognitive development Intrinsic validity: functional significance *vis a-vis* development.

Name of Instrument:	PEABODY PICTURE VOCABULARY TEST LLoyd M. Dunn
Publisher:	American Guidance Service, Inc. Publishers Building, Circle Pines, Minn. 55014
Description:	The Peabody Picture Vocabulary Test was developed to measure a child's "verbal intelligence" by assessing his auditory vocabulary.
Age Range:	Two years and six months to eighteen years
Administration Time:	10-15 minutes for each child
Administration Technique:	Individually administered for each child
Subcategories:	None
Normative Data:	Was based on 4.012 Caucasian children varying in age from 2-6 to 18 years of age all living in Nashville, Tennessee, in 1958.
Scoring:	Raw Score Age Equivalent Intelligence Quotient Percentile
Reliability:	Studies reported in the manual were with retarded children
Construct Validity:	Not statistically specified, words taken from Webster's New Collegiate Dictionary (1953); had to be illustratable.
Congruent Validity:*	A comparison of the PPVT and 1960 Binet Mental Age revealed r = .82 to .96. PPVT I.Q. scores correlated with WISC-P from .30 to .84.
Publisher's Interpretation:	The PPVT estimates verbal I.Q. based on auditory vocabulary.

*Other comparisons are available in the PPVT Manual.

Name of Instrument:	PRESCHOOL INVENTORY (1970)
Publisher:	Addison-Wesley Reading, Massachusetts (617) 786-4343
Description:	The instrument is an educational, not psychological instrument. It assesses areas necessary for school success.
Appropriate Age Level:	3-6 years
Administration:	Ease to administrate for the teacher. Child sits down with administrator.
Administration Time:	No limit; usually takes about 15 minutes
Group:	Individually administered
Subcategories:	Personal-social, responsiveness, associative vocabulary; concept or activation-numerical; concept activation-sensory
Norming Population:	Normed in Fall, 1969 on a national sample of 1,531 Head Start children; norms for 5 age groups: 3.0 to 6.5 years
Scoring:	Raw score, percentile